(No Model.)

W. W. BAYS.

CAR COUPLING.

No. 342,168. Patented May 18, 1886.

Fig. 1.

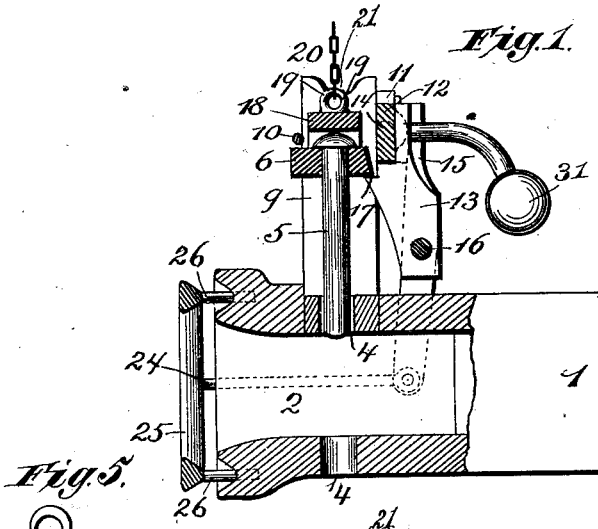


Fig. 7.

Fig. 5.

Fig. 2.

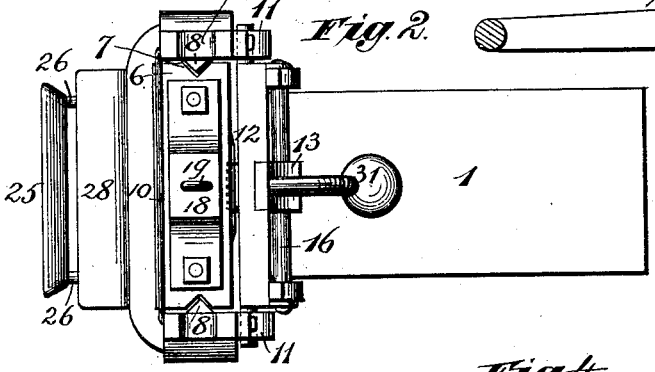


Fig. 6.

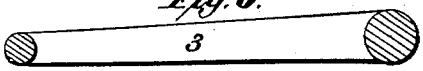


Fig. 3.

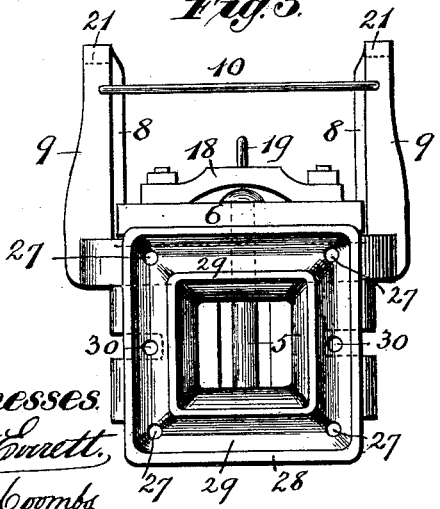
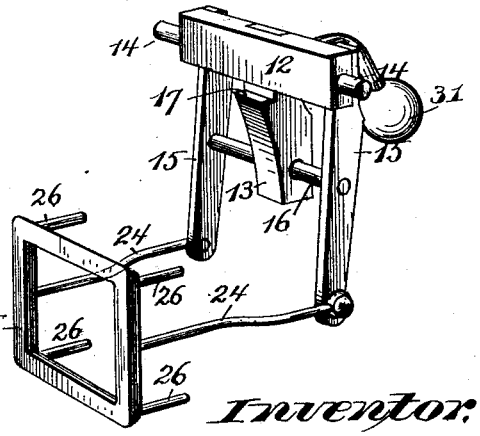


Fig. 4.



Witnesses.
Robt Ewett.
Jo. L. Coombs

Inventor.
William W. Bays.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM W. BAYS, OF ASHEVILLE, NORTH CAROLINA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 342,168, dated May 18, 1886.

Application filed March 10, 1886. Serial No. 194,739. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. BAYS, a citizen of the United States, residing at Asheville, in the county of Buncombe and State of North Carolina, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to an automatic car-coupling of the class in which a coupling-pin is so arranged as to be supported in an elevated position by means of a self-setting trigger, from which the pin is released in season to engage the coupling-link when the opposite draw-heads come together.

The distinguishing features of my invention and the construction, operation, and advantages of the various parts of my improved car-coupling will appear in the following description.

In the annexed drawings, illustrating the invention, Figure 1 is a longitudinal sectional elevation of a draw-head provided with my improved attachments. Fig. 2 is a plan view of my improved car-coupling. Fig. 3 is a front elevation of the same. Fig. 4 is a perspective detail view illustrating the self-setting trigger and its actuating mechanism. Fig. 5 is a view of a coupling lever or wand. Fig. 6 is a view of a straight coupling-link having one end enlarged or weighted. Fig. 7 represents a crooked link.

Referring to the drawings, the numeral 1 designates a draw-head, which, in the main, may be of any suitable or ordinary construction; but I prefer it to be quite large, especially on the face. This draw-head is provided with a recess, 2, for reception of the coupling-link 3, and has the usual opening or pin-hole, 4, at the top and bottom for passage of the coupling-pin 5, with which the link is engaged. The pin 5 is supported loosely in a vertical sliding block or bar, 6, the ends of which are provided with notches or grooves 7, that engage vertical guides 8 on the inner sides of the standards 9, which are secured to each side of the draw-head near its forward end. These standards 9, which are secured to each side of the draw-head, are preferably connected in front by a brace or rod, 10, and on their rear sides are provided with bearings 11, for a rocker-bar, 12, which supports the trigger 13 and its immediate actuating mechanism. The rocker-bar 12 is provided at its ends with pivots or journals 14, that rest in the bearings 11 on the back of the standards. To each end of the rocker-bar 12 is secured a depending lever, 15, and the opposite levers are connected by a cross-bar or round, 16, which passes through the lower end of the trigger. By reference to Figs. 1 and 4 it will be seen that the trigger 13 is formed on its forward edge or side with a ledge or shoulder, 17, which engages and supports the pin-carrying block 6 when the latter is raised.

To the upper side of the vertically-sliding block or bar 6 is bolted a lifting bar or strap, 18, which is curved or recessed on its under side, so as to form an arch over the head of the coupling-pin 5, and thereby allow the pin to have the necessary vertical play without liability of becoming detached from its support. This lifting bar or strap 18 is provided with a hook or ring, 19, for attachment of a rod, lever, wire, or chain, 20, that extends upward, and by which the coupling-pin 5 can be raised by an attendant on the top of the car. The coupling-pin can also be raised from the side of the car by any suitable rod or lever fulcrumed on the top of one of the standards 9, one end of said rod or lever being passed through the ring 19, while the attendant bears down on the other end. For this purpose I prefer to provide a notch, 21, in the top of each standard 9, in which to fulcrum the rod or hand-lever, and I also prefer to employ a lever, 22, having a hook on one end, and also provided with two protuberances, 23, near the other end, forming an intervening notch, as shown in Fig. 5, and by which lever the ring 19 can be engaged and raised with the attached pin-carrying block, the notch 23 being designed to hold the link, and thus guide it. The lower ends of the depending levers 15 are connected by horizontal sliding rods 24 to a face-ring, 25, which is provided with guide-pins 26, that enter openings 27 in the face-plate 28 of the draw-head. The face-plate 28 and face-ring 25 are preferably, but not necessarily, rectangular in form, as shown, respectively, in Figs. 3 and 4, and the face is formed with a

groove, channel, or depression, 29, that receives the face-ring when pressed back, to prevent the face from being injured.

In the rectangular form of face-ring the guide-pins 26 are located at each corner, and the openings 27 in the face-plate are correspondingly arranged.

In the vertical portion of the groove or depression 29 are located the openings 30, for the passage of the horizontally-sliding rods 24, that connect the levers 15 to the face-ring.

To the rear side of the trigger-supporting rocker-bar 12 is attached a weight, 31, which acts to throw the trigger 13, face-ring 25, and their intermediate connections forward. Instead of this weight, a spring might be employed for the same purpose; but I prefer to use a weight as being more reliable and effective and less liable to get out of repair.

The rear side of the pin-carrying block 6 and the forward side of the trigger 13 are preferably so beveled, inclined, or curved, as shown in Fig. 1, as to enable the block 6 to be readily raised in front of the yielding trigger. As soon as the pin-carrying block 6 is raised sufficiently, the weight 21 forces the trigger 13 forward, with its ledge or shoulder 17 engaged beneath the rear lower edge of the block 6, thereby supporting the pin in position to admit the entrance of the link into the cavity of the draw-head. When the opposite draw-heads come together in coupling two adjacent cars, the face-rings 25 and connected levers 15 are forced back, thereby imparting a partial rotation to the rocker-bar 12, and causing the trigger 13 to move back sufficiently to disengage and release the pin-carrying bar or block 6, thus carrying the coupling-pin into engagement with the link. It will be observed that the face-ring 25 nearly covers the end or circumference of the draw-head, so that in the act of coupling some part of said face-ring is sure to be touched by the opposite draw-head, even should the cars be so placed as not to come together in a direct line. I prefer to make the coupling-link 3 enlarged or weighted at one end, as shown in Fig. 6, so as to rest steady in a horizontal position, with its heavy end engaged in one draw-head, and thereby facilitate the engagement of its other end with the coupling device of the opposite draw-head.

The operation of the coupling will be readily understood, and it will also be seen that with the mechanism described the cars of a train can be readily connected and uncoupled at all times without any necessity of the attendant risking life or limb by going between the draw-heads to manipulate the coupling device. In order to admit the insertion of the link into either draw-head, it is only necessary to raise the coupling-pin, which can be effected from the top of the car by means of the chain 20, or rod or lever 22, or from either side of the car by means of a lever inserted in the ring 19, and fulcrumed on one of the standards. After the link is inserted the pin can be made to drop into engagement therewith, either by touching the trigger 13 with a lever or by pushing back the face-ring 25, thereby releasing the trigger from its engagement with the pin-supporting block. The link being now engaged in one draw-head and the coupling devices of the opposite draw-head being properly "set," as before described, the contact of the draw-head will force the face-rings backward, thereby tripping the trigger of the disengaged draw-head, and causing its coupling-pin to engage the link.

It is obvious that either a straight link, as shown in Fig. 6, or a crooked link, as shown in Fig. 7, may be used, according to the relative heights of the cars to be coupled.

What I claim as my invention is—

1. In a car-coupling, the combination of a draw-head having guide-standards, a pin-supporting block having a vertical movement between said standards, a trigger-supporting rocker-bar journaled in bearings on said standards and provided with depending levers, and a movable face-ring supported in front of the draw-head and connected with the lower ends of the depending levers, substantially as described.

2. The combination of a draw-head having guide-standards and a channeled face-plate provided with apertures 27 and 30, a pin-supporting block having a vertical movement between the standards, a rocker-bar journaled on the rear of the standards and carrying a trigger, a weight and depending levers, and a movable face-ring having guide-pins inserted in the apertures 27, and provided with sliding rods 24, that pass through the apertures 30, and connect with the lower ends of the rocker-levers 15, substantially as described.

3. The combination of a draw-head, a straight or crooked link weighted at one end, a coupling-pin suspended from a vertically-movable block, a rocker-bar, a trigger attached to said rocker-bar and adapted to support the pin-carrying bar, and a movable face-ring connected with the trigger-supporting rocker-bar, substantially as described.

4. The combination of a draw-head having guide-standards, a pin-supporting block having a vertical movement between said standards, a movable face-ring connected with the trigger-supporting rocker, and means for raising the pin-supporting block, substantially as described.

5. The combination of a draw-head having guide-standards 9 and a channeled face-plate, 28, provided with apertures 27 and 30, the pin-supporting block 6, having a strap, 18, and ring 19, the rocker-bar 12, having levers 15, the trigger 13, and weight 31, supported by said rocker-bar, the movable face-ring 25, having guide-pins 26, and the sliding rods 24, connecting said face-ring to the levers of the rocker-bar, substantially as described.

6. The coupling lever or "wand" 22, with a hook on one end for the purpose of connect-

necting with lifting-ring 19, (in case there be no chain or rod,) to uncouple cars from the top, and said lever or wand also provided with a notch, 23, near the opposite end, for the purpose of engaging and guiding the coupling-link 3, when desired, when the cars are being coupled, and especially for guiding said link when crooked, so as to connect draw-heads of different heights from the road-bed, and all done without the attendant ever going between the cars, either coupling or uncoupling, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM W. BAYS.

Witnesses:

JOHN D. DEVAULT,

LEO DEVAULT.